ML530 Guide

System 5

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Product features, specifications, system requirements, and availability are subject to change without notice.

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Documentation Feedback

We are always looking for ways to improve our documentation. If you have comments, corrections, or suggestions regarding our documentation, email us at ***techpubs@avid.com***.

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Chapter 1: Introduction to the ML530

The ML530 Mic-Line Interface is a 24-channel, digitally controlled analog preamplifier. The ML530 is controlled by the SC253i Interface Pilot, which is controlled from the System 5 console surface. The ML530 is packaged in a 2U rack enclosure.

Features

The ML530 provides gain over a range of -12 to +72 dB in 0.5 dB increments for each channel. The ML530 also features a high-pass filter, HiZ/LowZ switch, and phantom power.

Front panel LEDs provide status information for all features so the operator can quickly view the status of each input channel. Red front panel LEDs indicate signal clipping, mute, impedance, and phantom power activation. Green LEDs indicate signal presence, activation of the high-pass filter, and pad attenuator.

Redundant power is supported by purchasing an additional power module.

Applications

Used in conjunction with the Pro Series AM713 analog to MADI converter, the ML530 provides multiple variable gain inputs for the System 5 or Max Air. Additional ML530s can be added if more than 24 channels of variable gain inputs are desired.

System Requirements and Compatibility

Avid can only assure compatibility and provide support for hardware and software it has tested and approved.

For complete system requirements and a list of qualified computers, operating systems, hard drives, and third-party devices, visit *www.avid.com/compatibility*.

About This Guide

This guide provides a basic overview of ML530 features and functionality.

For complete instructions on connecting and configuring your system, see the *System 5 Installation Guide*.

Conventions Used in This Guide

All of our guides use the following conventions to indicate menu choices and key commands:

Convention	Action
File > Save	Choose Save from the File menu
Control+N	Hold down the Control key and press the N key
Control-click	Hold down the Control key and click the mouse button
Right-click	Click with the right mouse button

The names of Commands, Options, and Settings that appear on-screen are in a different font.

The following symbols are used to highlight important information:

User Tips are helpful hints for getting the most from your system.

Important Notices include information that could affect your data or the performance of your system.

Shortcuts show you useful keyboard or mouse shortcuts.

Cross References point to related sections in this guide and other Avid guides.

About www.avid.com

The Avid website (www.avid.com) is your best online source for information to help you get the most out of your system. The following are just a few of the services and features available.

Product Registration Register your purchase online.

Support and Downloads Contact Avid Customer Success (technical support); download software updates and the latest online manuals; browse the Compatibility documents for system requirements; search the online Knowledge Base or join the worldwide Avid user community on the User Conference.

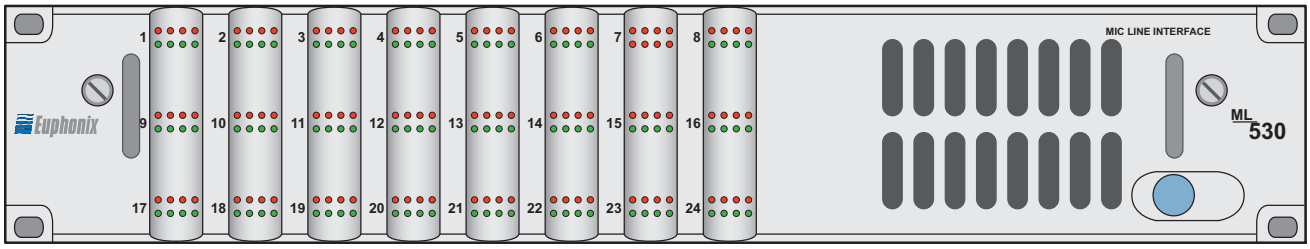
Training and Education Study on your own using courses available online or find out how you can learn in a classroom setting at a certified Avid training center.

Products and Developers Learn about Avid products; download demo software or learn about our Development Partners and their plug-ins, applications, and hardware.

News and Events Get the latest news from Avid or sign up for a demo.

Chapter 2: ML530 Features

Front Panel

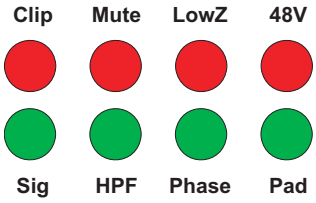


ML530 front panel

Power Switch The power switch, on the lower right, turns the unit on/off.

Status LEDs Eight LEDs provide status information for each of the 24 channels:

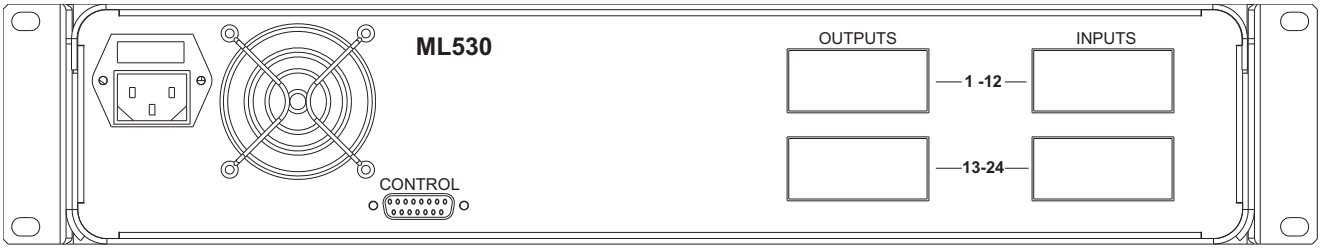
- Clip: Signal clipping (red)
- Mute: Channel muted (red)
- HiZ: High impedance (red)
- 48V: Phantom power (red)
- Sig: Signal present (green)
- HPF: High-pass filter (green)
- Phase: Phase invert (green)
- Pad: 12 dB attenuation (green)



Front panel Channel Status LEDs

Since the ML530 is software controlled, the power switch is the only front panel control.

Back Panel



ML530 front panel

Inputs (38-pin Elco) 24 inputs are provided on two 38-pin Elco connectors. The level of all signals input at these ports can be boosted or attenuated. In standard configuration, the input cable is configured by the customer. Elco connectors and pins are provided.

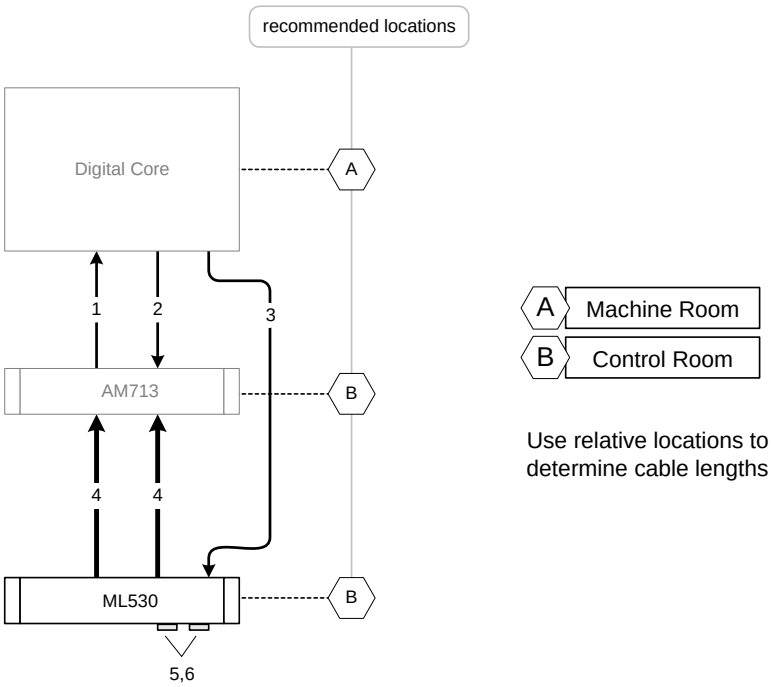
Outputs (38-pin Elco) 24 outputs are provided on two 38-pin Elco connectors. The supplied output cables fan out to two sets of 12 male XLRs for connection to the AM713 Analog to MADI converter.

Control (DB-15) Input for digital control signal from PC253i Digital Pilot. Signal format is Euphonix TCC bi-directional serial protocol. All switching and gain controls are communicated via this connector.

AC Line In (IEC) and Fuse Tray The power connector accepts standard IEC power cords. 90–250 VAC 110, 220, or 240 VAC, 50/60 Hz can be applied at this connector.

Chapter 3: Configuration and Connection

Standard Configuration



ML530 standard cable diagram

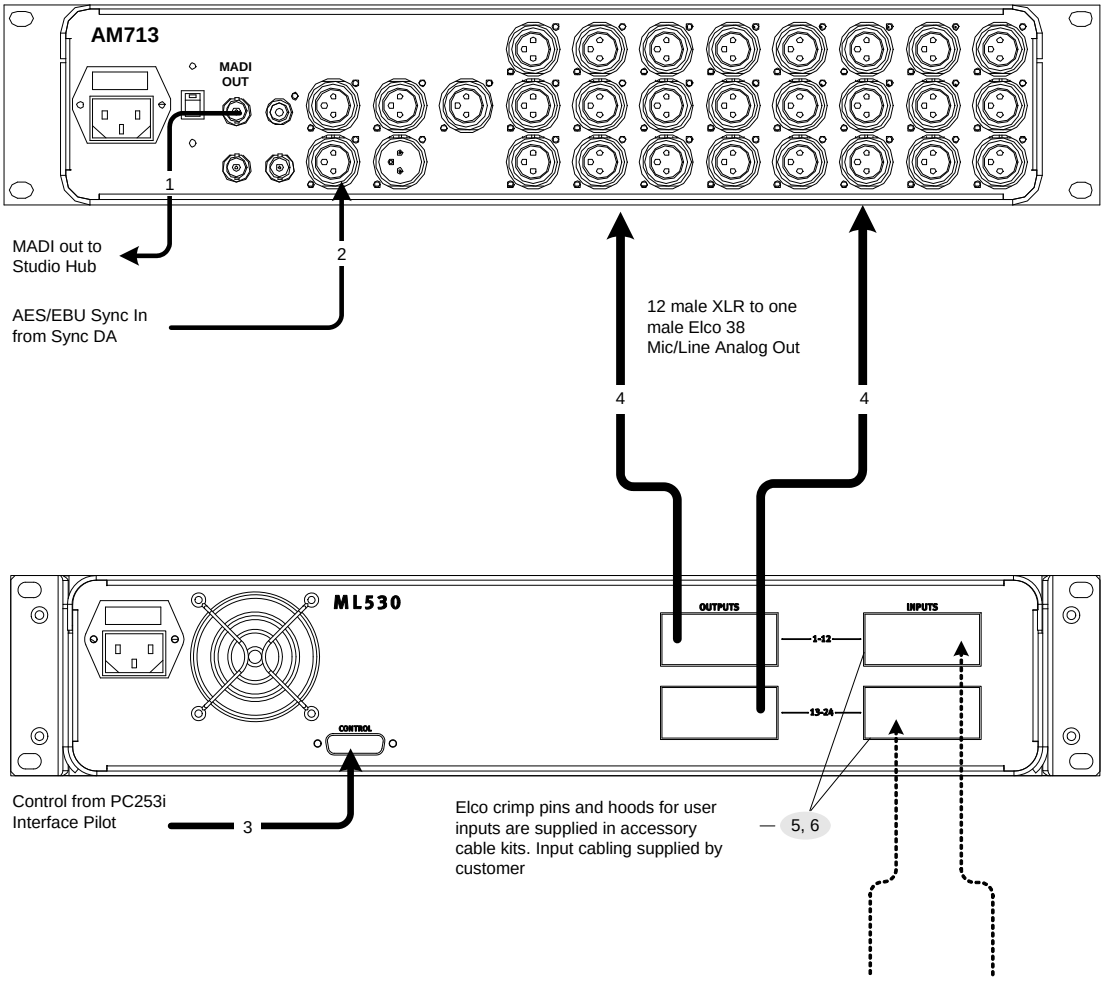
Elco crimp pins and hoods for inputs are supplied in accessory cable kits. Input cabling is not included.

Cable Specifications

Cable	Qty	Description	10M Part #	20M Part#	Length
		Accessory cable kits by special order	936-07083-01	936-07155-01	
1	1	**MADI Output**: RG59 75 Ω coax	032-07230-00	032-07306-00	
2	1	**AES/EBU Sync**: one male XLR <> one female XLR	030-07085-01	030-07153-01	
3	1	TCC Control from 253i Interface Pilot	030-06983-01	030-06985-01	
4	2	ML530 Analog Out one Elco 38 <> twelve male XLR	030-7108-01		.5 m
5	2	Elco 38-Pin Connector w/hood	100-02099-00		NA
6	80	Elco Crimp Pins	100-02100-00		NA

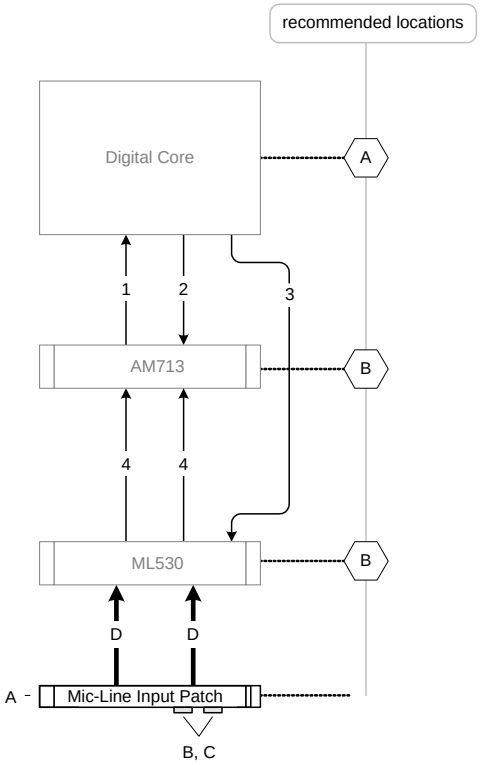
The standard lengths specified in the table above are supplied so the mic-line interface can be located in the control room. Cable kits are ordered separately. Custom lengths are available.

Connection Diagram



ML530 standard configuration

Optional Input Patch



Input Patch cable diagram

The optional input patchbay has the capacity to provide input patching to 48 channels or two ML530 interfaces. An additional set of cable D (below) is required for the second ML530 interface. Patchbay, cables, and pins are ordered separately.

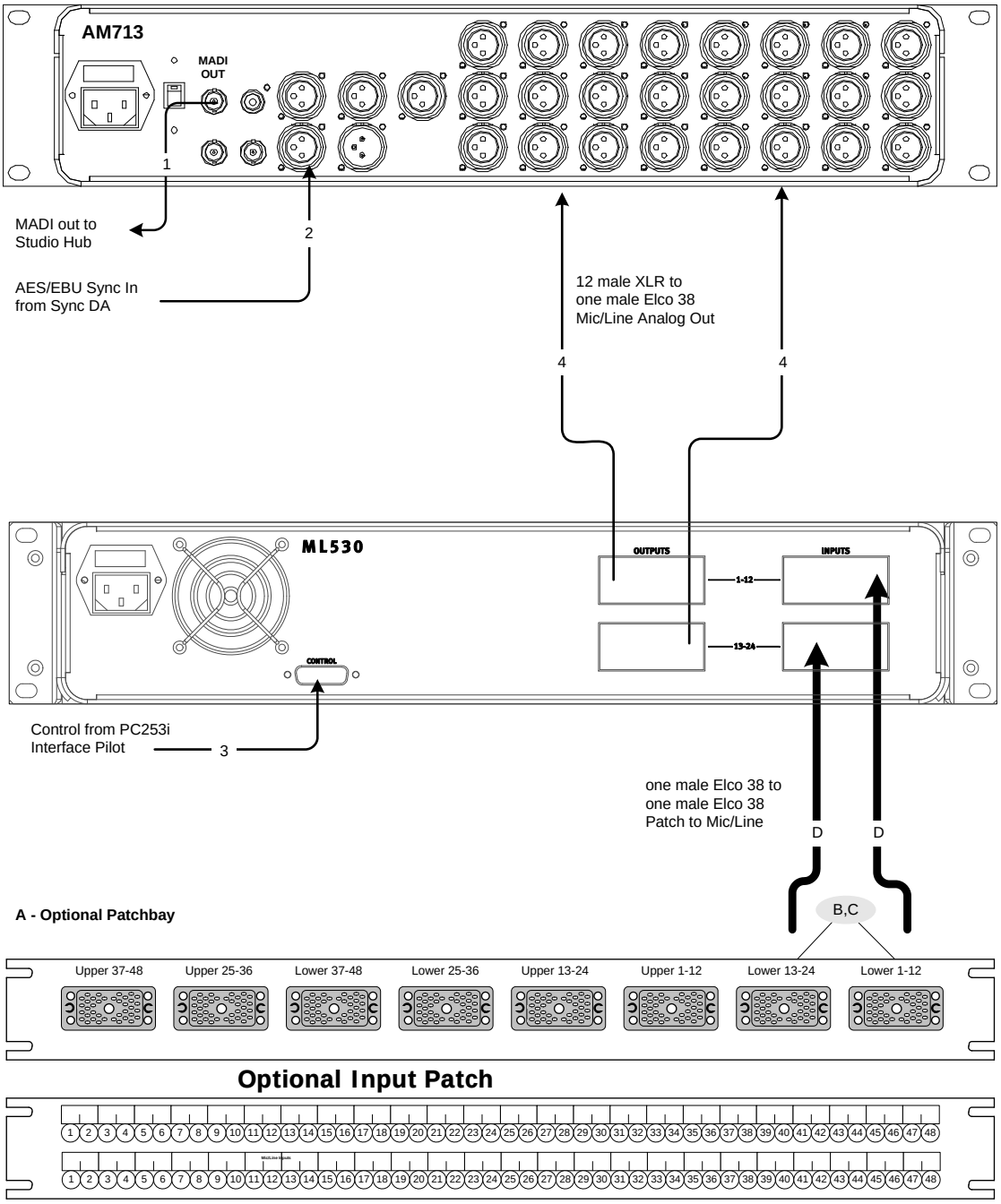
Cable Specifications

Part	Qty	Description	Part #	Length
A	1	Tie Line Patch	950-03770-01	NA
B*	2	Elco 38-Pin Connector w/hood	100-02099-00	NA
C*	80	Elco Crimp Pins	100-02100-00	NA
D**	2	**ML530 Analog Out** one male Elco 38 <> one male Elco 38	030-07158-01	2 m

* Elco hoods and crimp pins are included in standard 10m and 20m accessory cable kits.

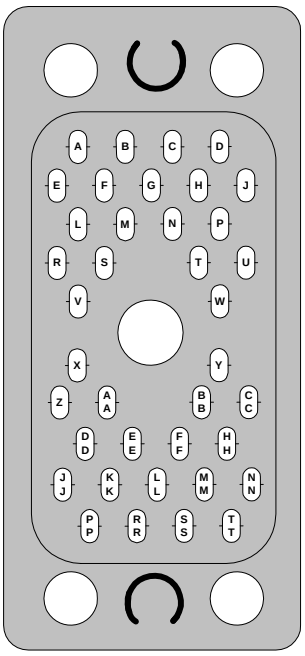
** 10m cable available, one male Elco 38 <> one male Elco 38, part #030-6913-01.

Connection Diagram



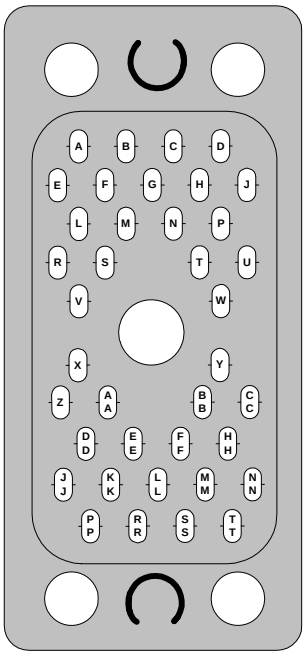
Input patch configuration

Elco 38 Input/Output Pinout



Num	Signal	Wiring Instruction & Description	+	-	G
1	Mic In 1 / Mic In 13	From studio Mic 1 / 13	A	E	L
2	Mic In 2 / Mic In 14	From studio Mic 2 / 14	B	F	M
3	Mic In 3 / Mic In 15	From studio Mic 3 / 15	C	H	N
4	Mic In 4 / Mic In 16	From studio Mic 4 / 16	D	J	P
5	Mic In 5 / Mic In 17	From studio Mic 5 / 17	DD	JJ	PP
6	Mic In 6 / Mic In 18	From studio Mic 6 / 18	EE	KK	RR
7	Mic In 7 / Mic In 19	From studio Mic 7 / 19	FF	LL	SS
8	Mic In 8 / Mic In 20	From studio Mic 8 / 20	HH	MM	TT
9	Mic In 9 / Mic In 21	From studio Mic 9 / 21	R	S	V
10	Mic In 10 / Mic In 22	From studio Mic 10 / 22	T	U	W
11	Mic In 11 / Mic In 23	From studio Mic 11 / 23	X	Z	AA
12	Mic In 12 / Mic In 24	From studio Mic 12 / 24	Y	BB	CC

ML530 In 1/In 2 pinout: Elco 38 socket



Num	Signal	Wiring Instruction & Description	+	-	G
1	Mic Pre Out 1 / Out 13	To AM713 Analog In 1 / In 13	A	E	L
2	Mic Pre Out 2 / Out 14	To AM713 Analog In 2 / In 14	B	F	M
3	Mic Pre Out 3 / Out 15	To AM713 Analog In 3 / In 15	C	H	N
4	Mic Pre Out 4 / Out 16	To AM713 Analog In 4 / In 16	D	J	P
5	Mic Pre Out 5 / Out 17	To AM713 Analog In 5 / In 17	DD	JJ	PP
6	Mic Pre Out 6 / Out 18	To AM713 Analog In 6 / In 18	EE	KK	RR
7	Mic Pre Out 7 / Out 19	To AM713 Analog In 7 / In 19	FF	LL	SS
8	Mic Pre Out 8 / Out 20	To AM713 Analog In 8 / In 20	HH	MM	TT
9	Mic Pre Out 9 / Out 21	To AM713 Analog In 9 / In 21	R	S	V
10	Mic Pre Out 10 / Out 22	To AM713 Analog In 10 / In 22	T	U	W
11	Mic Pre Out 11 / Out 23	To AM713 Analog In 11 / In 23	X	Z	AA
12	Mic Pre Out 12 / Out 24	To AM713 Analog In 12 / In 24	Y	BB	CC

ML530 Out 1/Out 2 pinout: Elco 38 socket

Connector Specifications

38-pin male w/ hood Elco P/N 00-8016-038000-519 (Euphonix P/N 100-02099)

Use crimp pins Elco P/N 60-8017-031300-339 (Euphonix P/N 100-02100)

Appendix A: ML530 Specifications

Performance Specifications

Gain Range	-12 dB to 72 dB in 0.5 dB increments
Phantom Power	+48 V ±2% (Switched per channel)
Maximum Input Level	41 dB (Pad inserted, unity gain, @1 kHz, @1% THD+N)
Differential Input Impedance	200 kΩ (Hi Z, Pad off, +48V off) 200 kΩ (Hi Z, Pad on, +48V off) 12.7 kΩ (Hi Z, Pad on, +48V on) 12.7 kΩ (Hi Z, Pad off, +48V on) 1.5 kΩ (Lo Z, Pad off, +48V off) 1.5 kΩ (Lo Z, Pad on, +48V off) 1.4 kΩ (Lo Z, Pad on, +48V on) 1.4 kΩ (Lo Z, Pad off, +48V on)
Maximum Output Level	29 dB (@1 kHz, @1% THD+N)
Output Impedance	100 Ω
Frequency Response	10 Hz – 60 kHz (-0.5 dB @ unity gain) 10 Hz – 50 kHz (-0.5 dB @ 30 dB gain) 10 Hz – 40 kHz (-0.5 dB @ 66 dB gain)
Gain Accuracy	±0.15 dB (@1 kHz)
Distortion (THD+N)	0.004% (@ 1 kHz @ 0 dB gain with +13.5 dB applied, 22 kHz filtered) < 0.02% (20 Hz – 20 kHz @ 13.5 dB 80 kHz filtered)
Equivalent Input Noise (EIN)	-127 dB (@66 dB gain, 22 Hz – 22 kHz filtered, Low Z mode, 150 Ω source)
Common Mode Rejection (CMR)	>50 dB (10 Hz – 20 kHz)
Phase Linearity	±10° (25 Hz – 20 kHz)
High-pass Filter	80 Hz 18 dB/octave switched per channel
Phase Invert	180° switched per channel

Environmental and Power Specifications

Operating Temperature	5–35°C
Power Requirements	90–250 VAC, 50/60Hz
Power Consumption	100 W

Physical Dimensions

Height	3.5 inches
Width	19 inches
Depth	18.6 inches
Weight	17 lb

Appendix B: Compliance Information

Environmental Compliance

Disposal of Waste Equipment by Users in the European Union

This symbol on the product or its packaging indicates that this product must not be disposed of with other waste. Instead, it is your responsibility to dispose of your waste equipment by handing it over to a designated collection point for the recycling of waste electrical and electronic equipment. The separate collection and recycling of your waste equipment at the time of disposal will help conserve natural resources and ensure that it is recycled in a manner that protects human health and the environment. For more information about where you can drop off your waste equipment for recycling, please contact your local city recycling office or the dealer from whom you purchased the product.

Proposition 65 Warning

⚠ *This product contains chemicals, including lead, known to the State of California to cause cancer and birth defects or other reproductive harm. Wash hands after handling.*

Perchlorate Notice

This product may contain a lithium coin battery. The State of California requires the following disclosure statement: "Perchlorate Material – special handling may apply, See www.dtsc.ca.gov/hazardouswaste/perchlorate."

Recycling Notice

EMC (Electromagnetic Compliance)

Avid declares that this product complies with the following standards regulating emissions and immunity:

- FCC Part 15 Class A
- EN55103-1 E4
- EN55103-2 E4
- AS/NZS CISPR 22 Class A
- CISPR 22 Class A

FCC Compliance for United States

Communication Statement

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Any modifications to the unit, unless expressly approved by Avid, could void the user's authority to operate the equipment.

Australian Compliance

Canadian Compliance

This Class A digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numérique de la classe A respecte toutes les exigences du Règlement sur le material brouilleur du Canada.

CE Compliance

(EMC and Safety)

Avid is authorized to apply the CE (Conformité Européenne) mark on this compliant equipment thereby declaring conformity to EMC Directive 2004/108/EC and Low Voltage Directive 2006/95/EC.

Safety Compliance

Safety Statement

This equipment has been tested to comply with USA and Canadian safety certification in accordance with the specifications of UL Standards:
UL 60950-1:2007, 2nd Ed and CAN/CSA-22.2 No. 60950-1-07, 2nd Ed.
Avid Inc., has been authorized to apply the appropriate NRTL mark on its compliant equipment.

Warning

Important Safety Instructions

1) Read these instructions.

2) Keep these instructions.

3) Heed all warnings.

4) Follow all instructions.

5) Do not use this equipment near water.

6) Clean only with dry cloth.

7) Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.

8) Do not install near any heat sources such as radiators, heat registers, stoves, or other equipment (including amplifiers) that produce heat.

9) Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.

10) Protect power cords from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the equipment.

11) Only use attachments/accessories specified by the manufacturer.

12) For products that are not rack-mountable: Use only with a cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the equipment. When a cart is used, use caution when moving the cart/equipment combination to avoid injury from tip-over.

13) Unplug this equipment during lightning storms or when unused for long periods of time.

14) Refer all servicing to qualified service personnel. Servicing is required when the equipment has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the equipment, the equipment has been exposed to rain or moisture, does not operate normally, or has been dropped.

15) For products that are a Mains powered device:
The equipment shall not be exposed to dripping or splashing and no objects filled with liquids (such as vases) shall be placed on the equipment.

Warning! To reduce the risk of fire or electric shock, do not expose this equipment to rain or moisture.

16) For products containing a lithium battery:
CAUTION! Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type.

17) For products with a power switch:
It should remain accessible after installation.

18) The equipment shall be used at a maximum ambient temperature of 40° C.

19) This unit is provided with a power supply cord set suitable for 120V AC input only (for U.S.A.and Canada). For other than U.S.A. and Canada, a qualified person must provide for use with this unit, an appropriate, approved power supply cord set which is in compliance with the end use country requirements and has a minimum cross-sectional area of 1.0mm2.

20) For units with more than one power cord:

CAUTION: This unit has more than one power supply cord. Disconnect two power supply cords before servicing to avoid electrical shock.

ATTENTION: Cet appareil comporte plus d'un cordon d'alimentation. Afin de prévenir les chocs électriques, débrancher les deux cordons d'alimentation avant de faire le dépannage.

21) For products with an operator-accessible fuse:

CAUTION: For continued protection against risk of fire, replace only with same type and rating of fuse.

ATTENTION: Pour ne pas compromettre la protection contre les risques d'incendie, remplacer par un fusible de même type et de même caractéristiques nominales.

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